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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
RAO, ANAND SHASHIKANT	
ART UNIT	**PAPER NUMBER**
2613	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/970,059	MEGGERS, JENS	
	Examiner	Art Unit	
	Andy S. Rao	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-9, 13-15, 19-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Krause (US Patent: 5,235,439).

Krause discloses a method of encoding a video stream (Krause: column 6, lines 37-56), comprising: (a) receiving a current video frame of the video stream (Krause: column 5, lines 50-55); (b) subdividing the current video frame into blocks of a selected block size (Krause: column 5, lines 65-68), and comparing the blocks to corresponding blocks of a decoded version of a preceding video frame to determine whether any of the blocks of the current video game are sufficiently changed from the preceding frame to be discarded (Krause: column 5, lines 53-63); (c) repeating (b) using at least one additional block size (Krause: column 6, lines 1-12), such that the current video frame is separately subdivided and compared to the preceding video frame using multiple block sizes (Krause: column 6, liens 18-30); (d) selecting from the multiple block sizes a block size

that produces a best video compression result (Krause: column 7, lines 1-38); and (e) encoding the video frame in the video stream with the block size selected in (d) (Krause: column 8, liens 6-30), as in claim 1.

Regarding claim 2, Krause discloses that the method for repeating (a), (b), (c), (d), and (e) for each of multiple frames of the video stream to generate an encoded video stream in which different frames are encoded using different block sizes (Krause: column 5, lines 23-45).

Krause discloses a method of encoding a video stream (Krause: column 6, lines 37-56), comprising: receiving a current video frame of the video stream (Krause: column 5, liens 50-55); determining which of multiple possible block sizes produces a best result for encoding the current video frame (Krause: column 7, lines 1-25), wherein the block sizes are used to subdivide and compare the current video frame and a preceding video frame to determine whether any blocks of the current video frame are sufficiently changed to be discarded (Krause: column 6, lines 18-37); compressing the current video frame using the block size determined to produce the best result (Krause: column 6, lines 37-57), and storing the compressed video frame in conjunction with an indication of said block size (Krause: column 7, lines 35-53), as in claim 3.

Krause discloses a method of encoding video (Krause: column 6, lines 37-58), the method comprising: dividing a video frame into blocks according to a uniform block size; identifying changed blocks by comparing each block to the corresponding block in a decoded version of the previous frame (Krause: column 5, lines 45-52)); copying changed blocks into a contiguous block of memory (Krause: column 6, lines 18-32); and adding a preamble block (Krause: column 7, lines 25-53), as in claim 4.

Regarding claim 5, Krause discloses that the preamble block indicates the blocks that are included in the contiguous block of memory (Krause: column 8, lines 50-65), as in the claim.

Regarding claim 6, Krause discloses the preamble block indicates the block size used to encode the video frame (Krause: column 7, lines 50-60), as in the claim.

Regarding claim 7, Krause discloses that the preamble block size varies (Krause: column 7, lines 35-40), as in the claim.

Regarding claims 8-9, Krause discloses that the comparison comprises determining luminance difference from the corresponding block in the encoded version of the previous frame (Krause: column 6, lines 25-35), as specified.

Krause discloses a method of encoding video (Krause: column 6, lines 37-56), the method comprising: encoding a video frame using a first uniform block size to create a first encoded frame (Krause: column 5, lines 50-60); encoding the same video frame using a second uniform block size to create a second encoded frame (Krause: column 5, lines 60-67); comparing the size of the first encoded frame to the second encoded frame; and selecting the uniform block size that results in a smaller encoded frame (Krause: column 7, lines 1-25), as in claim 13.

Krause discloses an encoded video stream (Krause: column 8, lines 10-15) comprising: video frames wherein the video frames are encoded using multiple block sizes (Krause: column 5, lines 30-45); and preamble blocks including bitmaps of the encoded video frames and indicators indicating the block size used to encode the video frames in the video stream (Krause: column 7, lines 35-52), as in claim 14.

Krause discloses a method of decoding an encoded video stream (Krause: column 8, lines 50-65), comprising: receiving the encoded video frame encoded using multiple block size detection method (Krause: column 9, lines 1-10); decompressing the received video frame (Krause: column 8, lines 60-65); determining the block size used to encode the video frame (Krause: column 7, lines 25-36); determining which blocks are present in the encoded video frame (Krause: column 8, lines 40-55); copying the blocks present in the encoded video frame into the display area (Krause: column 8, lines 60-65); and displaying the video frame (Krause: column 8, lines 65-68), as in claim 15.

Krause discloses system for encoding and decoding video (Krause: figures 1 and 5), the system comprising: identifying means for detecting pixel blocks which have changed from a previous decoded video frame (Krause: column 6, lines 20-30); storing means for copying the changed pixel blocks and a preamble block (Krause: column 7, lines 25-45); compressing means for compressing the changed pixel blocks and the preamble block (Krause: column 6, lines 40-55); and identifying means for selecting a smallest encoded frame (Krause: column 7, lines 1-10), as in claim 19.

Krause discloses a method of encoding a video stream (Krause: column 5, lines 50-55), the method comprising: (a) subdividing a current video frame into blocks of a selected block size (Krause: column 5, lines 55-60); (b) identifying blocks of the current video frame that differ by at least a minimum extent from corresponding blocks in a decoded version of a preceding video frame (Krause: column 6, lines 18-30); (c) repeating (a) and (b) using at least one additional block size (Krause: column 6, lines 55-65), such that the current video frame is subdivided and compared to the preceding video frame using a plurality of block sizes (Krause: column 7, lines 1-10); and (d) selecting

from the multiple block sizes a block size that produces a best video compression result (Krause: column 7, lines 15-25), as in claim 20.

Regarding claims 21-23, Krause discloses encoding the video frame using each of the plurality of block sizes (Krause: column 8, lines 5-30), as in the claims.

Krause discloses a method of encoding a video frame (Krause: column 5, lines 50-55), the method comprising: providing a decoded preceding video frame (Krause: column 6, lines 20-25); subdividing the video frame into a plurality of blocks, wherein each block comprises at least one pixel (Krause: column 5, lines 55-60); identifying the blocks of the current video frame that differ by at least a minimum extent from corresponding blocks in the decoded preceding video frame (Krause: column 6, lines 25-31); creating a map of the locations of the identified blocks in the video frame (Krause: column 7, lines 30-50); arranging the map and the identified blocks in a substantially contiguous block of memory (Krause: column 8, lines 5-30); and applying a compression process to the data in the substantially contiguous block of memory (Krause: column 6, lines 38-57), as in claim 24.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krause in view of Cooper.

Krause discloses a method of encoding video (Krause: column 6, lines 37-58), the method comprising: dividing a video frame into blocks according to a uniform block size; identifying changed blocks by comparing each block to the corresponding block in a decoded version of the previous frame (Krause: column 5, lines 45-52)); copying changed blocks into a contiguous block of memory (Krause: column 6, lines 18-32); and adding a preamble block (Krause: column 7, lines 25-53), as in claims 10-12. However, Krause fails to disclose the use of a LZW coding algorithm as in the claims. Cooper discloses that LZW coding methods (Cooper: column 4, lines 12-49) are known to be used in conjunction with compression/decompression methods (Cooper: column 1, lines 20-25) in order to process coded data with very large length runs (Cooper: column 2, lines 40-45). Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate the Cooper's LZW coding into the Krause method in order to process very large length runs in the produced coded data. The Krause method, now incorporating the Cooper LZW coding method, has all of the features of claims 10-12.

6. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krause (US Patent: 5,235,419) in view of Aharoni et al., (hereinafter referred to as "Aharoni").

Krause discloses a method of decoding an encoded video stream (Krause: column 8, lines 50-65), comprising: receiving the encoded video frame encoded using multiple block size detection method (Krause: column 9, lines 1-10); decompressing the received video frame (Krause: column 8, lines 60-65); determining the block size used to encode the video frame (Krause: column 7, lines 25-36); determining which blocks are present in

the encoded video frame (Krause: column 8, lines 40-55); copying the blocks present in the encoded video frame into the display area (Krause: column 8, lines 60-65); and displaying the video frame (Krause: column 8, lines 65-68), as in claims 16-17. However, Krause fails to disclose using key frames for decoding and seeking frames as in the claims. Aharoni discloses that the use of key frames (Aharoni: column 10, lines 20-50) in decoding is desired in order to allow for frame skipping/dropping when bandwidth is restricted (Aharoni: column 12, lines 40-55). Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art incorporate Aharoni's use of key frames into the Krause method in order to have the Krause's decoding implement frame skipping/dropping when bandwidth gets restricted. The Krause method, now incorporating Aharoni's use of key frames, has all of the features of claims 16-17.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni et al., (hereinafter referred to as "Aharoni") in view of Krause (US Patent: 5,235,419).

Aharoni discloses a data processing system (Aharoni: figure 1) comprising: a server computer (Aharoni: column 11, lines 25-65) comprising a video encoder for encoding video streams (Aharoni: column 8, lines 50-67; column 18, lines 30-50); a client device comprising a decoder application for decoding and displaying the video streams (Aharoni: column 17, lines 40-60); and a video encoder module for encoding video streams comprising block detection components, crunching components, and compressing components (Aharoni: column 9, lines 15-56), as in claim 18. However, Aharoni fails to disclose the use of multiple block sizes as in the claim. Krause discloses that it is known to use multiple block sizes in compression (Krause: column 5, lines 55-67) in order to achieve a variation in compression rates (Krause: column 5, lines 30-40).

Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Krause teaching of using multiple block sizes into the Aharoni system in order to achieve a variation compression rates. The Aharoni data processing system, now incorporating Krause's multiple block sizes, has all of the features of claim 18.

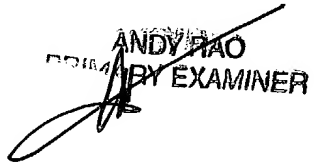
Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (703)-305-4813. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S. Kelley can be reached on (703)-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andy S. Rao
Primary Examiner
Art Unit 2613



asr
August 5, 2004